



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,264	03/31/2004	Issy Kipnis	42P17422	9836

8791 7590 07/17/2007
BLAKELY SOKOLOFF TAYLOR & ZAFMAN
1279 OAKMEAD PARKWAY
SUNNYVALE, CA 94085-4040

EXAMINER

MANDALA, VICTOR A

ART UNIT	PAPER NUMBER
----------	--------------

2826

MAIL DATE	DELIVERY MODE
-----------	---------------

07/17/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/816,264

Applicant(s)

KIPNIS ET AL.

Examiner

Victor A. Mandala Jr.

Art Unit

2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 19, 21-24 and 29-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 19-24 is/are allowed.
- 6) ☐ Claim(s) 1 and 5-9 is/are rejected.
- 7) ☒ Claim(s) 2-4, 10&11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>4/30/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 6, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,672,421 Lin.

1. Referring to claim 1, Lin teaches of an interconnect apparatus comprising: a silicon substrate, (Figure 3 #30 and Col. 4 Lines 8-9); contact pads, (Figure 3 #54 or 64), processed on the silicon substrate, (Figure 3 #30 and Col. 4 Lines 8-9), to connect to an integrated circuit (IC) die, (Figure 3 #56 & 60); interconnections, (Figure 3 #52 & 66 and Col. 5 Lines 3-8), selectively interconnecting the contact pads, (Figure 3 #54 or 64), the interconnections, (Figure 3 #52 & 66 and Col. 5 Lines 3-8), monolithically processed on the silicon substrate, (Figure 3 #30 and Col. 4 Lines 8-9); and circuit elements, (Figure 3 #84 & 86), monolithically processed on the silicon substrate, (Figure 3 #30 and Col. 4 Lines 8-9), in the same plane as the interconnections, (Figure 3 #52 & 66), with the same processing, (Initially, and with respect to claim 1, note that a "product by process" claim is directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (footnote 3). See also In re Brown, 173 USPQ 685; In re Luck, 177

Art Unit: 2826

USPQ 523; In re Wertheim, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); In re Fitzgerald, 205 USPQ 594, 596 (CCPA); In re Marosi et al., 218 USPQ 289 (CAFC); and most recently, In re Thorpe et al., 227 USPQ 964 (CAFC, 1985) all of which make it clear that it is the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that, as here, an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not.

Note that Applicant has burden of proof in such cases as the above case law makes clear. As to the grounds of rejection under section 103, see MPEP § 2113), as the contact pads, (Figure 3 #54 or 64), and the interconnections, (Figure 3 #52 & 60 and Col. 5 Lines 3-8), the circuit elements, (Figure 3 #84 & 86), to interoperate with the IC die, (Figure 3 #56 & 60).

2. Referring to claim 6, Lin teaches of an interconnect apparatus according to claim 1, wherein the silicon substrate comprises a high-resistivity silicon substrate, (Figure 3 #30 and Col. 4 Lines 8-9).

3. Referring to claim 8, Lin teaches of an interconnect apparatus according to claim 1, wherein the circuit elements comprise an active circuit element, (Col. 6 Line 1).

3. Referring to claim 9, Lin teaches of an interconnect apparatus according to claim 1, further comprising a cap, (Figure 1 #46 and Col. 4 Lines 8-9), processed onto the silicon substrate, (Figure 1 #30 and Col. 4 Lines 8-9), to hermetically isolate circuit elements on the silicon substrate, (Figure 1 #30 and Col. 4 Lines 8-9).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S.

Patent No. 6,934,448 Akashi et al.

5. Referring to claim 1, Akashi et al. teaches an interconnect apparatus comprising: a silicon substrate, (Figures 22 & 26 #102); contact pads, (Figures 22 & 26 #115), processed on the silicon substrate, (Figures 22 & 26 #102), to connect to an integrated circuit (IC) die, (Figures 22 & 26 #152); interconnections, (Figures 22 & 26 the trace that start at #106 and leads to #115), selectively interconnecting the contact pads, (Figures 22 & 26 #115), the interconnections monolithically processed on the silicon substrate, (Figures 22 & 26 #102); and circuit elements, (Figures 22 & 26 #106), monolithically processed on the silicon substrate, (Figures 22 & 26 #102), in the same plane as the interconnections, (Figures 22 & 26 the trace that start at #106 and leads to #115), with the same processing, (Initially, and with respect to claim 1, note that a "product by process" claim is directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (footnote 3). See also In re Brown, 173 USPQ 685; In re Luck, 177 USPQ 523; In re Wertheim, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); In re Fitzgerald, 205 USPQ 594, 596 (CCPA); In re Marosi et al., 218 USPQ 289 (CAFC); and most recently, In re Thorpe et al., 227 USPQ 964 (CAFC, 1985) all of which make it clear that it is the

Art Unit: 2826

final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that, as here, an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not.

Note that Applicant has burden of proof in such cases as the above case law makes clear. As to the grounds of rejection under section 103, see MPEP § 2113), as the contact pads, (Figures 22 & 26 #115), and the interconnections, (Figures 22 & 26 the trace that start at #106 and leads to #115), the circuit elements, (Figures 22 & 26 #106), to interoperate with the IC die, (Figures 22 & 26 #152).

6. Referring to claim 5, Akashi et al. teaches an interconnect apparatus according to claim 1, wherein the circuit elements comprise a sensor circuit, (Figures 22 & 26 #106 and Col. 16 Line 36).

7. Referring to claim 6, Akashi et al. teaches an interconnect apparatus according to claim 1, wherein the silicon substrate comprises a high-resistivity silicon substrate, (Col. 15 Lines 53-54 where the substrate is an undoped Silicon otherwise the reference would have taught a narrower limitation and define the substrate as doped silicon).

Allowable Subject Matter

8. Claims 2-4, 7, & 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. Claims 19-24 and 29-35 are allowed.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor A. Mandala Jr. whose telephone number is (571) 272-1918. The examiner can normally be reached on Monday through Thursday from 8am till 6pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sue Purvis can be reached on (571) 272-1236. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2826

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

VAMJ

7/9/07



**EVAN PERT
PRIMARY EXAMINER**